

CLAIMS

What is claimed is:

1. A field emission device, comprising: a silicon substrate having an emitter electrode formed in a surface portion thereof; an insulating layer formed on said emitter electrode and having a nano hole to expose said emitter electrode; an emitter formed on said emitter electrode exposed through said nano hole; and a gate electrode formed on said insulating layer.
2. The field emission device as claimed in claim 1, wherein said emitter electrode is formed by an impurity implantation.
3. The field emission device as claimed in claim 1, further comprising a catalyst layer formed between said emitter electrode and said emitter.
4. The field emission device as claimed in claim 3, wherein said catalyst layer is made of a transition metal.
5. The field emission device as claimed in claim 1, wherein said emitter is formed of any one of carbon nanotube, a nano grain film and a metal tip.